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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,729	01/11/2002	Satoshi Nakamura	15209	6597

23389 7590 03/29/2005

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EXAMINER

TSE, YOUNG TOI

ART UNIT PAPER NUMBER

2637

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,729

Applicant(s)

NAKAMURA, SATOSHI

Examiner

YOUNG T. TSE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2002.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 1,2,6 and 11 is/are allowed.
6) ☒ Claim(s) 17-25 is/are rejected.
7) ☒ Claim(s) 3-5,7-10 and 12-16 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 11 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 080802.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because "CLK8" and "CLK16" shown in Figure 7 should be labeled "CKL8D" and "CKL16D", respectively. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: on page 4, line 6, Applicants are requested to update the serial No. 09/921,866, now U.S. Patent No. 6,483,360 B2; on page 13, line 6, "2" appear to read "1". Appropriate correction is required.
3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In claim 17, lines 6-8, the claimed subject matter of "the compression multi-phase clock signals having a compression period equal to one-second of a length of one bit in the input data" seems not provide in the specification.

Claim Objections

5. Claims 3-5, 7-10, 12-15, 16-25 are objected to because of the following informalities:

In claim 3, line 13, "of second" should be "of the second". Also see line 13 of claims 8, 14, and 20.

In claim 4, line 14, "a specific clock signal" should be "the specific clock signal" for clarity. Also see line 14 of claims 9, 15, and 21.

Wherein claim 5 depends upon claim 4.

In claim 7, line 2, "comprises" should be "comprise". Also see line 2 of claims 12 and 18.

Wherein claim 10 depends upon claim 9.

In claim 13, line 2, "wherein" should be "wherein said method". Also see claim 19, line 2.

Wherein claim 16 depends upon claim 15.

In claim 17, lines 14-15 and 17, "said non-uniform multi-phase clock signals" and "phase lock" should be "said compression multi-phase clock signals" and "is phase locked", respectively.

In claim 23, line 19, "buffers" should be "buffers;".

Wherein claim 22 depends upon claim 21 and claims 24-25 depend upon claim 23.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 17-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 17, lines 11 and 16, Applicants are requested to clarify the difference of "a condensation portion".

Wherein claims 18-22 are depended upon claim 17.

In claim 23, lines 24-29, the claimed subject matter of the phase comparison portion is unclear and the phrase "said clock signals" lacks antecedent basis since both clock signals are used in a second and third delay locked loop, but it is unclear both the clock signals are the same or not.

In claim 24, line 3, "the phrase "said delay buffers" lacks antecedent basis since it is unclear the m-stage or the n-stage buffers.

In claim 25, lines 6 and 8, what is the difference of "a first stage thereof"?

Allowable Subject Matter

8. Claims 1-2, 6, and 11 are allowed.
9. Claims 2-5, 8-10 and 12-16 would be allowable if rewritten or amended to overcome the objections set forth in this Office action.
10. Claims 17-25 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
11. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to show or suggest that an oversampling clock recover method or apparatus for generating non-uniform multi-phase clock signals having a non-uniform interval and three or more phase clock signals for one bit of an input data; controlling a phase of the non-uniform multi-phase clock signals so that a phase of one of two edges

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in two-phase clock signals having a relative narrower interval among the non-uniform multi-phase clock signals is locked with a phase of a transition point of the input data; and digitally controlling, by using selection circuits and delay locked loops each comprising a plurality of delay buffers, phases of two or more sets of uniform multi-phase clock signals having a uniform interval at a resolution less than a propagation delay of a delay buffer in said delay locked loops.

Conclusion

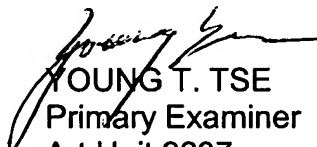
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Donnelly et al., Millar, Nakamura and Watarai are made of record as describing a related oversampling clock recover circuit including digital delay locked loops for generating clock signals to a phase detector of a phase locked loop of the clock recovery circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday and Wednesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



YOUNG T. TSE
Primary Examiner
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